

## WHAT IS CLAIMED IS:

1. An image processing apparatus which executes image processing for a radiographical image obtained by converting, into an electrical signal, an intensity  
5 distribution of radiation that is radiated to an object and has passed through the object, comprising:  
    defining means for defining a gray level conversion curve to be used for gray level conversion on the basis of a contrast of the image after gray  
10 level conversion of the radiographical image; and  
    gray level conversion means for converting a gray level of the radiographical image by using the gray level conversion curve defined by said defining means.
2. The apparatus according to claim 1, wherein said  
15 defining means defines the gray level conversion curve on the basis of a contrast improvement factor defined by the gray level conversion curve.
3. The apparatus according to claim 2, wherein to  
define the gray level conversion curve, the defining  
20 means calculates the contrast improvement factor by fixing the contrast of the gray level conversion curve and translating the gray level conversion curve on a coordinate system whose abscissa represents an input pixel value and whose ordinate represents an output  
25 pixel value.
4. The apparatus according to claim 2, wherein to define the gray level conversion curve, the defining

means calculates the contrast improvement factor by changing the contrast of the gray level conversion curve and translating the gray level conversion curve on a coordinate system whose abscissa represents an input pixel value and whose ordinate represents an output pixel value.

5     The apparatus according to claim 1, wherein said defining means defines the gray level conversion curve on the basis of the contrast of a specific image region of the object after gray level conversion.

6.     The apparatus according to claim 1, wherein said defining means defines the gray level conversion curve on the basis of the contrast of a predetermined region of the object after gray level conversion.

15    7.     An image processing method of executing image processing for a radiographical image obtained by converting, into an electrical signal, an intensity distribution of radiation that is radiated to an object and has passed through the object, comprising:

20           an analysis step of defining a gray level conversion curve to be used for gray level conversion on the basis of a contrast of the image after gray level conversion of the radiographical image; and  
            a gray level conversion step of converting a gray level of the radiographical image by using the gray level conversion curve defined in the analysis step.

8.     An image processing program which executes image

processing for a radiographical image obtained by  
converting, into an electrical signal, an intensity  
distribution of radiation that is radiated to an object  
and has passed through the object, characterized by  
5 causing a computer to execute:

an analysis step of defining a gray level  
conversion curve to be used for gray level conversion  
on the basis of a contrast of the image after gray  
level conversion of the radiographical image; and

10 a gray level conversion step of converting a gray  
level of the radiographical image by using the gray  
level conversion curve defined in the analysis step.

9. A storage medium which stores an image processing  
program which executes image processing for a  
15 radiographical image obtained by converting, into an  
electrical signal, an intensity distribution of  
radiation that is radiated to an object and has passed  
through the object, wherein the image processing  
program causes a computer to execute:

20 an analysis step of defining a gray level  
conversion curve to be used for gray level conversion  
on the basis of a contrast of the image after gray  
level conversion of the radiographical image; and

a gray level conversion step of converting a gray  
25 level of the radiographical image by using the gray  
level conversion curve defined in the analysis step.